Costs of Endangered Species – Do we Know What to Plan For ?

Planning Community of Practice Conference

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Congressional Requirement

- *1988 Amendments to ESA "FWS shall submit to the Congress an annual report...[on a] species-by-species basis of all reasonably identifiable Federal Expenditures made primarily for the conservation of endangered and threatened species..."*

Corps Practice

- *Data call after completion of Fiscal Year*
- *Coordination through HQ, MSC, and Districts*
- *Guidance focused on labor expenditures*
- *HQ personnel changes led to fall through the cracks*

2004

- OMB and HQ Review of Missouri. River. Navigation Project

- Simmons and Frost ***Accounting for species: the true costs of the Endangered Species Act***
- "Reported ESA costs are highly underestimated"
  - Limitations of Current Reporting
    - Leave out private costs
    - Only report on implementation
    - Not all agencies reporting
    - State, local, and private costs not reported

Sea Turtle Costs - 2003

Henderson 2004

Effects Determination

- **Effects Determination -** This category includes the personnel and contract services required to determine and plan for protection of TES. These costs include:
  - 1-1 Coordination and Determination
  - 1-2 Site Visits and Inspections
  - 1-3 Litigation and Office of Counsel Review
  - 1-4 Funding Transfers for Coordination and Effects Determination to Other Agencies, e.g., USFWS, NMFS, States; NGO
  - 1-5 Funding Transfers for Cooperative Studies or Research
  - 1-6 In-house research

ESA Protection and Conservation Measures

- The ESA Conservation and Protection Measures are the actions and management measures that account for (inventory, survey, and monitor) and protect ESA species and habitat, for constructed and operating projects. These costs include:
  - 2-1 Inventory, Survey and Monitoring
  - 2-2 ESA and Incidental Take Observers
  - 2-3 Protection - Species
    - -Avoidance
    - –Relocation

(continued)

ESA Protection and Conservation Measures (concl'd)

ESA Prot. & Cons. Costs (concluded)

- 2-4 Protection - Habitat
  - -Construction, Creation, Restoration
  - -Disturbance Prevention (signage, fencing)
- 2-5 Design for ESA Protection and Conservation Measures
- 2-6 Construction and O&M of ESA infrastructure, e.g. fish ladders
- 2-7 Land Acquisition
- 2-8 Funding Transfers for ESA Protection and Conservation Measures to Other Agencies, e.g., USFWS, NMFS, States
- 2-9 Environmental Stewardship Labor (OMBIL)

Equipment Costs

- This category includes equipment costs attributable to ESA requirements. Two components make up the category:

  - **3-1 Equipment Costs - Charges and Purchases**

  - **3-2 Equipment Modifications due to ESA requirements**

Costs Category 4 Other Species Costs

- In the event a species expenditure doesn't fit the other four categories, the costs are included and described here.
- These are expenditures for species and groups of species. Expenditures that are for support of all species, and cannot be linked to a species or group of species, should be included in the Other Expenditures Input, from the Main Menu.

Other Expenditure Input

- **Other Expenditures not Attributable to a Species:**
  - **Supervisory Costs or Overhead**
  - **Training or Updates**
  - **Equipment (cameras, software, field equipment) for the TES program, not for single species or group of species**
- **Memphis Navigation reported $1000 in administrative costs.**
- **After entry of each "Other Expenditure" use the Submit function.**

Have Costs Varied?

	Species Costs	Other Expenditures	Total Expenditures
FY05	$154,651,742	$5,359,109	$160,010,851
FY06	$201,957,702	$2,672,523	$204,630,225
FY07	$208,088,178	$4,033,166	$212,121,344

	FY05	FY06	FY07
Mammals	$1,981,685	$1,981,685	$2,037,962
Birds	$15,198,912	$21,543,578	$28,030,693
Reptiles	$4,879,706	$3,928,092	$3,192,152
Amphibians	$61,370	$167,242	$49,546
Fish	$129,754,831	$171,504,085	$168,289,564
Clams	$906,656	$1,271,192	$1,364,006
Snails	$29,431	$40,328	$45,158
Insects	$405,371	$682,528	$2,724,181
Arachnids	$1,600	$1,600	$1,600
Crustaceans	$4,110	$36,060	$56,023
Corals	$0		$17,859
Flowering Plants	$1,426,270	$841,565	$620,401
Conifers	$0	$0	$1,500
Ferns	$1,800	$2,100	$3,100
Lichens	$0	$3,750	$0

Without Anadromous Fish

	Species Costs	Other Expenditures	Total Expenditures
FY05	$47,789,721	$5,359,109	$53,148,830
FY06	$81,895,938	$2,672,523	$84,568,461
FY07	$98,008,850	$4,033,166	$102,042,016

Breakdown of Costs Between Corps Elements

- Complicated by who does the work vs. Corps function
- Estimation of Other Expenditures does “catch” costs, but doesn’t attribute them to an element

Function / Element Breakdown

	FY05	FY6	FY07
Planning, Pro Mgt	$114,683,400	$153,393,302	$175,851,199
Navigation	$19,662,689	$8,682,431	$1,147,097
Environ. Stewardship	$17,263,917	$26,620,592	$25,915,551
Other Env	$563,852	$6,708,107	$904,850
Regulatory	$2,909,476	$3,625,710	$3,312,598
Other Ops.	$1,324,136	$850,382	$288,553

Identifying Differences Between Years

Total Expenitures	$ 88,546	$ 2,001,506

Total Expenitures	$ 214,350	$ 0

FY05 MVN Summarized Report

Species	Corps In-House	Contract
Operations - Navigation		
A007-V01 Manatee, West Indian: *Operations - Navigation*	$ 554	$ 0
B079-V02 Plover, piping except Great Lakes watershed: *Operations - Navigation*	$ 277	$ 0
C00O-V01 Sea turtle, Kemp's ridley: *Operations - Navigation*	$ 10,593	$ 503,830
C00U-V01 Sea turtle, loggerhead: *Operations - Navigation*	$ 26,200	$ 1,351,176
E04W-V01 Sturgeon, gulf: *Operations - Navigation*	$ 1,038	$ 146,500
E06X-V01 Sturgeon, pallid: *Operations - Navigation*	$ 5,415	$ 0

Top 10 Costliest Species

FY05		FY06		FY07	
Salmon, chinook	$53,008,239	Salmon, chinook	$81,877,465	Salmon, chinook	$61,430,511
Steelhead	$40,005,202	Sturgeon, pallid	$45,099,621	Sturgeon, pallid	$54,963,608
Sturgeon, pallid	$17,658,678	Steelhead	$31,836,666	Steelhead	$35,206,223
Salmon, sockeye U.S.A.	$12,122,112	Crane, whooping	$10,427,905	Tern, least	$10,925,303
Plover, piping	$4,506,216	Tern, least	$5,400,831	Plover, piping	$10,420,604
Tern, least	$4,003,827	Plover, piping	$5,265,091	Salmon, sockeye U.S.A.	$9,633,655
Flycatcher, southwestern willow	$3,346,170	Salmon, sockeye U.S.A.	$5,209,675	Trout, bull	$4,035,202
Sea turtle, loggerhead	$2,609,613	Sturgeon, white	$3,402,645	Beetle, valley elderberry longhorn	$2,676,927
Sturgeon, white	$1,406,438	Sparrow, Cape Sable seaside	$2,017,000	Flycatcher, southwestern willow	$2,064,255

Species Costs – 11 – 20

FY05		FY06		FY07	
Eagle, bald	$891,783	Sea turtle, loggerhead	$1,594,693	Eagle, bald	$1,585,621
Minnow, Rio Grande silvery	$843,475	Eagle, bald	$1,459,453	Sea turtle, loggerhead	$1,307,802
Salmon, chum	$824,556	Trout, bull	$1,327,090	Sparrow, Cape Sable seaside	$971,422
Sea turtle, Kemp's ridley	$815,744	Salmon, coho	$1,137,958	Sea turtle, Kemp's ridley	$617,048
Manatee, West Indian	$743,377	Manatee, West Indian	$683,336	Kite, Everglade snail	$592,020
Trout, bull	$730,573	Flycatcher, southwestern willow	$657,003	Higgins eye (pearlymussel)	$557,000
Panther, Florida	$441,200	Beetle, valley elderberry longhorn	$652,692	Manatee, West Indian	$485,209
Higgins eye (pearlymussel)	$431,171	Higgins eye (pearlymussel)	$645,213	Sturgeon, white	$465,715
Sturgeon, gulf	$423,469	Sea turtle, Kemp's ridley	$585,091	Sea turtle, green except where endangered	$381,756
Sturgeon, shortnose	$408,341	Sea turtle, green except where endangered	$493,765	Logperch, Roanoke	$348,013

Species Costs – 21 – 31

FY05		FY06		FY07	
Stork, wood	$377,179	Logperch, Roanoke	$350,220	Sturgeon, gulf	$321,499
Logperch, Roanoke	$353,340	Panther, Florida	$323,600	Salmon, chum	$314,825
Beetle, valley elderberry longhorn	$337,500	Pelican, brown	$304,402	Crane, whooping	$301,270
Kite, Everglade snail	$328,709	Salmon, chum	$301,626	Puget Sound Steelhead	$301,247
Pondberry	$311,450	Minnow, Rio Grande silvery	$290,578	Salmon, coho	$301,247
Crane, whooping U.S.A.	$271,790	Sturgeon, gulf	$260,059	Whale, right	$260,979
Sparrow, Cape Sable seaside	$251,923	Whale, right	$235,751	Stork, wood	$254,392
Sea turtle, leatherback	$249,262	Seagrass, Johnson's	$225,750	Pondberry	$242,258
Seagrass, Johnson's	$235,764	Sea turtle, leatherback	$222,918	Sturgeon, shortnose	$241,554
Sea turtle, hawksbill	$227,048	Pondberry	$222,258	Sea turtle, hawksbill	$220,715
Sea turtle, green	$220,538	Kite, Everglade snail	$209,521	Sea turtle, leatherback	$211,682

Chinook Salmon, E06D

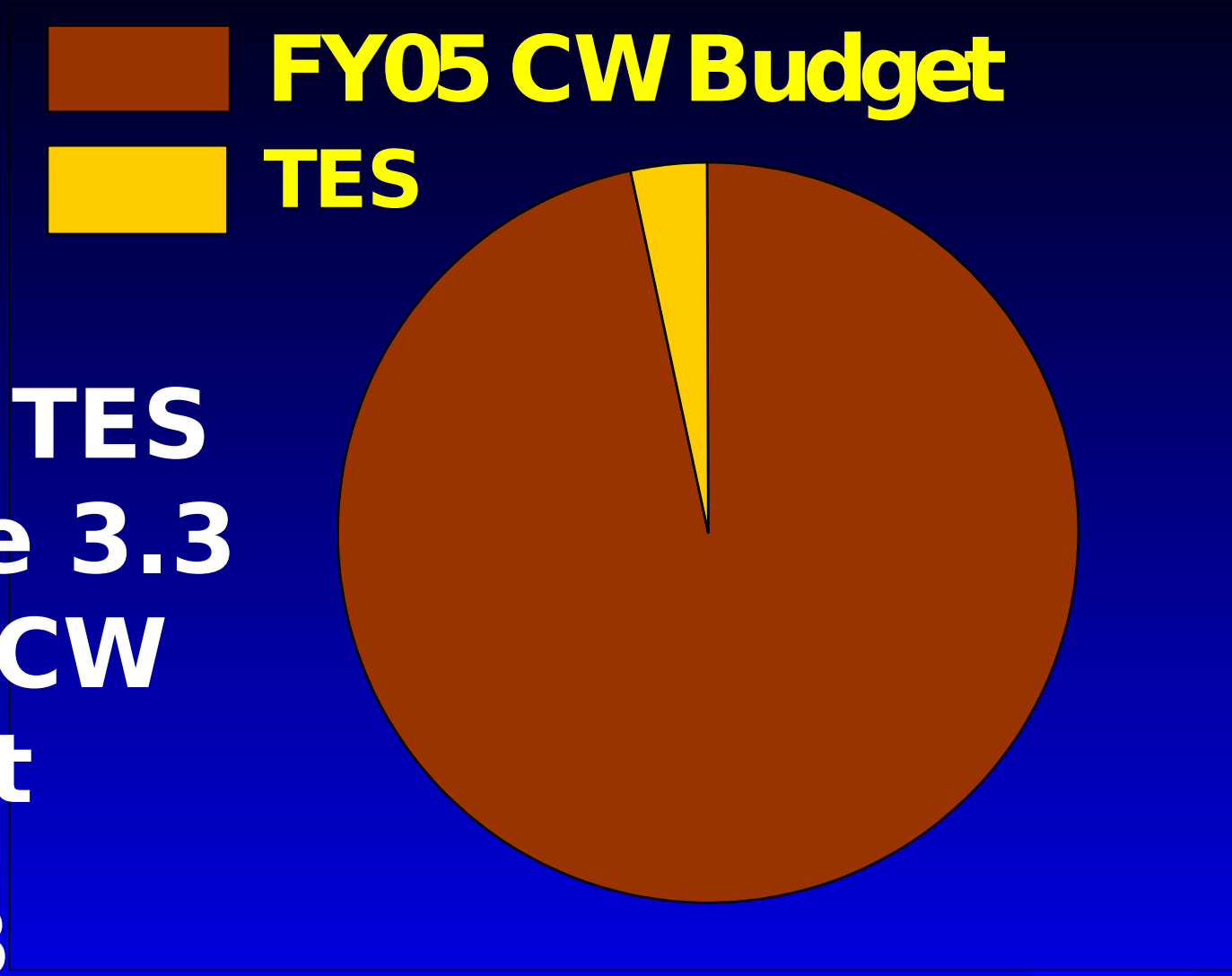
Salmon, chinook CA Central Valley spring-run	E06DA	$220,356
Salmon, chinook CA coastal	E06DB	$15,207
Salmon, chinook lower Columbia R.	E06DD	$2,557,471
Salmon, chinook Puget Sound	E06DE	$14,521,254
Salmon, chinook spring upper Columbia R.	E06DF	$12,760,533
Salmon, chinook upper Willamette R.	E06DG	$397,619
Salmon, chinook winter Sacramento R.	E06DH	$109,500
		$15,422,23

Reducing Uncertainty in Future Costs

- Limited by 3 years of data
- Activity location, magnitude, seasonality, institutional position affect costs; all vary from year to year
- Reporting inconsistencies
- Use of template as a framework to guide estimates of costs.

Using the Template as a Framework

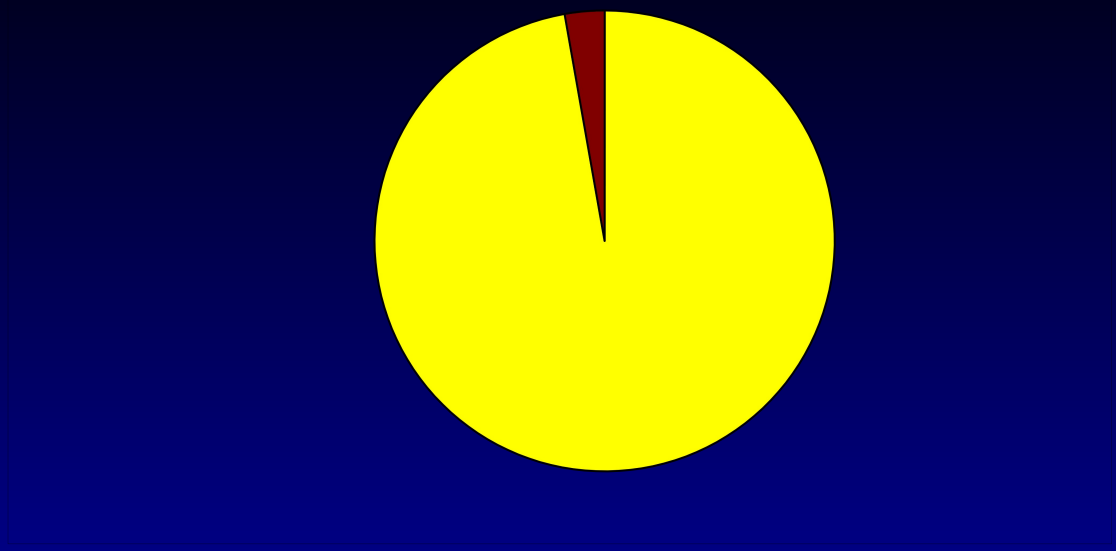
	FY05	FY06	FY07
Effects Determination			
1-1 Coordination and Determination	**553,405**	**$1,554,817**	**$1,867,010**
1-2 Site Visits and Inspections	**26,831**	**$269,948**	**$10,244**
1-3 Litigation and OOC	**27,930**	**$17,778**	**$700**
1-4a Funding Transfers to Other Agencies	**150,300**	**$10,534**	**$1,485,000**
1-4b Funding Transfers for Research, Cooperative St.	**150,000**		**$10,000**
ESA Protection and Conservation Measures			
2-1 Inventory, Survey, and Monitoring	**918,050**	**$573,025**	**$369,000**
2-3a Protection - Species: Avoidance		**$5,500**	
2-3b Protection - Species: Relocation		**$128,100**	
2-4a Protection - Habitat: Construction, Creation, Restoration	**2,634,500**	**$1,999,375**	**$6,259,000**
2-4b Protection - Habitat: Disturbance, Prevention	**9,500**	**$111,500**	**$5,000**



For FY05, TES Costs were 3.3 % of the CW Budget

CW: $4.7 B

TES: $160 M

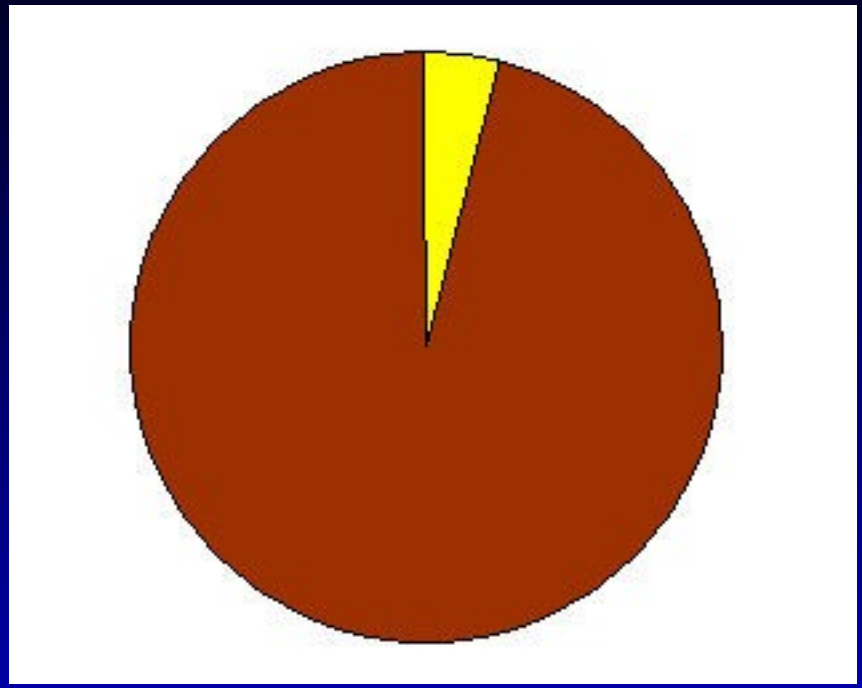


$ 202 M
$ 7.413B

2.7 % of CW Budget

FY 06

For FY07, TES Costs were 4.4 % of the CW Budget



CW: $4.8 B

TES: $212 M